

WHAT IS CLAIMED IS:

Sub A2

1. A stator for use in a rotating machine, the stator having a longitudinal axis and comprising:
a first electrical conductor; and
a second conductor wound, in-hand, over the first conductor and along the
5 longitudinal axis, the second conductor electrically isolated from the first conductor along the length of the first and second conductors.

10 2. The stator of claim 1 wherein the first conductor has an end electrically connected to an end of the second conductor.

15 3. The stator of claim 2 wherein the first conductor is wound over the second conductor along the axis in a first direction to form a first layer of the stator and, at an end region of the stator, the first conductor is wound over the second conductor along the axis in a second direction, opposite the first direction to form a second layer of the stator.

20 4. The stator of claim 3 wherein, at the end region, the position of the first conductor and the second conductor are transposed.

5. The stator of claim 4 wherein the first conductor and second conductor are wound as a pancake coil.

6. The stator of claim 5 further comprising ground wall insulation disposed over the pancake coil.

25 7. The stator of claim 6 wherein the pancake coil is racetrack-shaped.

8. The stator of claim 7 wherein the pancake coil has a saddle form.

30 9. The stator of claim 1 wherein the first conductor and second conductor are wound as a pancake coil.

10. The stator of claim 1 wherein the first conductor and second conductor are formed of copper.

11. A method of forming a stator for use in a rotating machine, the method comprising winding, in hand, and along the longitudinal axis, a first electrical conductor over a second conductor, the second conductor electrically isolated from the first conductor along the length of the first and second conductors.

10 12. The method of claim 11 further comprising electrically connecting an end of the first conductor to an end of the second conductor.

15 13. The method of claim 12 including winding the first conductor over the second conductor along the axis in a first direction to form a first layer of the stator; and at an end region of the stator, winding the first conductor over the second conductor along the axis in a second direction, opposite the first direction to form a second layer of the stator.

14. The method of claim 13 further comprising, at the end region, transposing the position of the first conductor and the second conductor.

20 15. The method of claim 14 further comprising winding the first conductor and second conductor into a pancake coil.

16. The method of claim 15 further comprising applying ground wall insulation over the pancake coil.

25 17. The method of claim 16 comprising forming the pancake coil into a racetrack-shape.

30 18. The method of claim 17 comprising forming the pancake coil into a saddle form.

19. The method of claim 11 comprising winding the first conductor and second conductor into a pancake coil.

20. The method of claim 11 wherein the first conductor and the second conductor
5 are formed of copper.